

#### ABSTRACT OF THE DISCLOSURE

The invention provides a knocking detection apparatus including: spark plugs disposed in cylinders of an internal combustion engine; ion current detecting means 2 for detecting ion currents flowing in the spark plugs; time-frequency transforming means 3 for setting time intervals allowing one or more overlaps within a time from after ignition by the spark plugs to until its own cylinder or another cylinder next ignites and sampling current values of the ion currents in the respective time intervals to determine the time-frequency components thereof; knocking detecting means 4 for detecting knocking on the basis of the time-frequency components; and detection control means 5 for inputting a running status and controlling the time-frequency transforming means and the knocking detecting means.